

## CLAIMS:

1. A method of embedding auxiliary data in a host signal, the method comprising the steps of:

- using a predetermined data embedding method having a given embedding rate and distortion to produce a composite signal;
- 5 – using a portion of said embedding rate to accommodate restoration data identifying the host signal conditioned on said composite signal; and
- using the remaining embedding rate for embedding said auxiliary data.

2. A method as claimed in claim 1, comprising the steps of:

- 10 – dividing the host signal into successive segments;
- applying the predetermined data embedding method to said segments;
- accommodating in a segment the restoration data for a previous segment.

3. A method as claimed in claim 2, wherein each segment comprises the restoration data for said previous segment as well as auxiliary data.

4. A method as claimed in claim 2, comprising the steps of:

- (a) accommodating auxiliary data only in a segment of a given length;
- (b) accommodating, in a subsequent segment, restoration data only for the
- 20 previous segment
- (c) adapting the length of said subsequent segment to the amount of restoration data being embedded therein;
- (d) repeating steps (b) and (c) a predetermined number of times.

25 5. A method as claimed in claim 4, wherein said step (d) comprises repeating steps (b) and (c) until the length of the subsequent segment is smaller than a predetermined threshold.

6. An arrangement for embedding auxiliary data (w) in a host signal (X), the arrangement comprising:

- a predetermined data embedder (23) having a given embedding rate and distortion to produce a composite signal (Y) with embedded data (d);
- 5 – means (24,25) for generating restoration data (r) identifying the host signal (X) conditioned on the composite signal (Y); and
- means (26) for accommodating said restoration data (r) in a portion of said embedded data (d) and said auxiliary data (w) in the remaining portion of said embedded data.

10 7. A method of reconstructing a host signal from a composite signal representing a distorted version of said host signal with data embedded therein, the method comprising the steps of:

- retrieving the embedded data from the composite signal;
- splitting the embedded data into restoration data and auxiliary data;
- 15 – reconstructing the host signal using the reconstruction data, given the composite signal.

8. A method as claimed in claim 7, comprising the steps of:

- dividing the composite signal into successive segments;
- using the restoration data accommodated in a segment for reconstructing a previous
- 20 segment of the host signal.

9. A method as claimed in claim 8, wherein each segment of the composite signal comprises the restoration data for said previous segment of the host signal as well as auxiliary data.

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10. An arrangement for reconstructing a host signal (X) from a composite signal (Y) representing a distorted version of said host signal with data (d) embedded therein, the arrangement comprising:

- means (43) for retrieving the embedded data (d) from the composite signal (Y);
- 30 – splitting means (44) for splitting the embedded data (d) into restoration data (r) and auxiliary data (w);
- reconstruction means (46) for reconstructing the host signal (X) using the reconstruction data (r), given the composite signal (Y).

11. A composite information signal (Y) with embedded data (d) comprising restoration data (r) and auxiliary data (w), said restoration data identifying the distortion of a host signal (X) conditioned on said composite signal.